

Racal Equipment List (British, American & Canadian) - 07/30/07

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This is an ongoing project. I'm always looking for more information.

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Receivers:

Model	Coverage	Bandwidths	Notes
R-2174	0.5-30MHz	7 filter slots	See RA-6790/GM
RA-17	1-30MHz	0.1/0.3/0.75/1.2/3/ 8kHz	Their first receiver. Uses drift cancelling circuit based on the work of Trevor Wadley. Triple conversion. 39.35-40.65MHz 1st IF, 2.0-3.0MHz 2nd IF, 100kHz 3rd IF. Xtal calib. British "valves" (e.g. EF91, 6F33, GZ34) and connectors, rack mount 10.5" high, 67 lbs
RA-17 Mk II			Same as RA-17 except w/ improved IF
RA-17L	1-30MHz	0.1/0.3/1.2/3/ 6.5/13kHz	Same as RA-17 except w/ improved RF stage; double-tuned circuit and ECC-189 instead of E180F
RA-17 C-12			Same as RA-17 except w/ American tubes except RF (ECC-189)
RA-17 C-16			Same as RA-17 except w/ all American tubes (6ES8 RF), beefier audio output (12AT7 & 6005 in place of two 6AU6s), SO-239 conns for IF & ant
RA-17W	1-30MHz	0.2/0.5/1.2/2/4/ 13kHz	Same as RA-17 except with different IF BWs (rare)
RA-37	12.5-980kHz		L.F. convertor for RA-17, 2.98-2.0MHz output, rack mount 3-1/2" high
RA-71	0.5-30MHz	unknown	American made variant of RA-17 (probably C-16),

			product detector, notch filter, \$1200 when new
RA-78G or H			RA-17 w/ SA-535C digital freq display, SA-77 freq comparator, huge and heavy
RA-78J or K			as above w/ RA-137 LF conv.
RA-81			RA-17 or RA-117 and RA-66B panadaptor in one unit
RA-87	3-15MHz	3.1kHz, (2.7 opt)	Four chan xtal controlled receiver, avail rack mount 8-3/4" high (40 lbs) or table cabinet 12"h X 20-1/2"w X 15"h (50 lbs)
RA-103			"Dual Diversity Terminal" two RA-17s receivers, RA-70 freq convs and PV-78B conv/keyers, weight? don't ask
RA-117	1-30MHz	0.1/0.3/1.2/3/6.5/13kHz	Similar to RA-17 C-16, but quadruple conversion w/ 1.5MHz IF stage & filter added before 100kHz IF, two versions avail; one w/ British "valves" and one w/ American tubes (including two 6688s), both have American connectors (SO-239...)
RA-129			Non-diversity version of RA-103
RA-137	12.5-980kHz		LF convertor, same as RA-37 except w/ tuning scale for preselctor
RA-153	1-30MHz	0.1/0.3/0.75/1.2/3/8kHz	Essentially two RA-117 receivers with common VFOs and 7360s in the mixer, designed for HF-DF & ionospheric studies, 21" of rack space, 130lbs!
RA-166A			"Panoramic Recording Receiver", RA-17, RA-66, MA-256 and Mufax D-611-X chart recorder, scans 1 MHz band and records "waterfall" chart of freq, sig strength versus time

RA-166B			As above w/ MA-257 stepping unit, scans up to ten different 1 MHz bands at preset times
RA-217	1-30MHz	0.2/1/3/13kHz	solid-state version of RA-117, same Wadley Loop design and IF freqs, 7" h, 13" w, 13" d, 35 lbs
RA-218			UK made version of RA-1218
RA-237	12.5-980kHz		LF convertor for RA-117, otherwise same as RA-137
RA-253			similar to RA-153
RA-329B			mil version of RA-217, in ruggedized case with MA-323 FSK term and speaker
RA-337	0.3-980kHz		LF convertor for RA-217/1217 RA-1218, RA-1219, powered by receiver, requires 3MHz signal from receiver, rack mount 1-3/4" high
RA-915	2-28MHz	3.1kHz	USB or LSB, four channel xtal controlled, 24VDC, 3-1/2h X 17"w X 16"d, 21 lbs
RA-1205	1.5-24MHz		modular single channel HF receiver, up to eight channels, rack mount 6"h
RA-1217			Rack mount version of RA-217, 3-1/2" high
RA-1218	1-30MHz	0.2/3/8kHz std 0.5/1.2/6/13 opt	re-engineered RA-1217, 7 digit nixie display, AM/USB/LSB/CW, Wadley Loop design w/ stabilized 5MHz master osc, same IFs as RA-117, rack mount, 5-1/4" high
RA-1219	1-30MHz	0.2/3/8kHz std 0.5/1.2/6/13 opt	Same as RA-1218 except w/ "Racalator" frequency synthesizer in place of master osc and mixers
RA-1220	1-30MHz	0.2/3/8kHz std 0.5/1.2/6/13 opt	Similar to RA-1218 and RA-1219 except w/ circuitry for locking master osc to

"Racalator"

RA-1772 0.015-30MHz

Similar to RA-6772 (US) and 8772 (Canada) except made in UK.

Options as follows:

RA1772 a / b / c / d / e / f

SUFFIX a = Crystal filter configuration.

A= USB & LSB (3 KHz types), .3 KHz, 3 KHz, 8 KHz

B= USB & LSB (3 KHz types), .3 KHz, 1 KHz, 8 KHz

C= USB (3 KHz type), .3 KHz, 1. KHz, 3 KHz, 8 KHz

D= USB (2.7 KHz type), .3 KHz, 1 KHz, 3 KHz, 8 KHz

E= USB & LSB (6 KHz type), 3 KHz, 8 KHz (apparently common ISB setup with AFC)

F= USB & LSB (6 KHz type), 1 KHz, 8 KHz. (Same as above)

G= USB & LSB (6 KHz type), 1 KHz, 3, KHz, 13 KHz (apparently common ISB setup without AFC)

H= USB & ISB (3 KHz type), 1, 3 KHz, 8 KHz (Same as above)

"Additional suffix letters will be introduced as further filter combinations are defined".

SUFFIX b = Frequency standard fitted

O= None fitted; uses external standard.

S2= Type 9400 fitted (ie, standard stability unit).

S3= Type 9420 fitted (ie, high stability ovenized unit)

SUFFIX c = Unknown - no data available

SUFFIX d = ISB filter identification

O= Not fitted

B3= 3 KHz filter (2.7KHz minimum bandwidth)

B6= 6 KHz filter (5.7 KHz minimum bandwidth)

SUFFIX e = Frequency shift keying

O= Not fitted

F= Fitted

SUFFIX f = Automatic Frequency Control

O= Not fitted

C= Fitted

RA-1792 0.1-30MHz 7 filter slots

USB/LSB/ISB/CW/FSK/AM/FM, synthesized, 10Hz steps, microprocessor control, 100 chan memory, remote control, several versions available w/ options like

			1Hz tuning, BITE, special filters, no front panel (remote only), TCXO, OCXO, closely related to RA-6790 w/different front panel and processor control, 110-240VAC, 18-32VDC, rack mount 5.25" high, 31lbs
RA-1794	2-512MHz	0.3/1.2/3/8/15/ 30/300kHz	USB/LSB/CW/AM/FM, synthesized, keypad only, microprocessor control, 100 chan memory, LED displays, ruggedized, 8"x10.1"x15.7", 35.2lbs
RA-1795	20MHz-1GHz		USB/LSB/CW/AM/FM/pulse, synthesized, 10Hz steps, microprocessor control, 100 chan memory, LED displays, IEEE-488 remote, rack mount 5.25" high, Racal SES Ltd
RA-1796	2MHz-1GHz		USB/LSB/CW/AM/FM/pulse, synthesized, 10Hz steps, microprocessor control, 100chan memory, LED displays, ruggedized for EW use, scanning and search functions, 8"x15.4" x15.7", 46.2lbs
RA-3701	0.015-30MHz	0.3/1/2.7/6/12kHz	USB/LSB/CW/AM/FM (ISB&FSK option), synthesized, 1 or 10Hz steps, CPU control, 100ch memory, TCXO (±1.5ppm), BITE, IEEE488 or RS423-A interface, 100-240VAC, rack mount 5.25" high, 31lbs
RA-3702	0.015-30MHz	0.3/1/2.7/6/12kHz	same specs as RA-3701 except w/ dual receivers in one package, 44lbs
RA-3703	0.015-30MHz	0.3/1/2.7/6/12kHz	remote control version of RA-3701 (no front panel), same specs as 3701
RA-3704	0.015-30MHz	0.3/1/2.7/6/12kHz	remote control version of RA-3702 (no front panle), same specs as 3702
RA-3791	0.01-30MHz	0.1-12kHz	DSP receiver, rack mount

	(variable)	5.25" high
RA-6217A	0.98-30MHz 0.2/1/3/6/13kHz	variation of RA-1217 made in US, digital mechanical dial, AM/FM/USB/LSB/DSB, tunable preselector or wideband RF input, triple conversion Wadley Loop, rack mount 3-1/2 high, 25 lbs
RA-6217B		as above w/ xtal controlled first LO
RA-6217D		like RA-6217B, except for remote control use
RA-6217E		like RA-6217B w/ output to control the preselector (mil R-1555/URR-62)
RA-6217F		Slave receiver for RA-6217D
RA-6217Q		Same as RA-6217B with wideband (100 KHz) output
RA-6218		Same as RA-6217 with Nixies
RA-6230		Slave receiver for use with RA-6772P DF set
RA-6337	3-980kHz	L.F. convertor for RA-6217
RA-6390	1-30MHz 0.3/1/3/6/16kHz	USB/LSB/CW/AM/FM, TCXO, synthesized, digital BFO, modular const, derived from RA-1772 but with front end and mixers like RA-6790, remote control
RA-6772	0.015-30MHz 6 filters	LED readout, similar to RA-1772 (UK) and RA-8772 (Canada) except US made, plug-in card const
RA-6772E	0.015-30MHz	Improved version of RA-6772 using plug-in modules shielded w/ mu-metal, closer in design to RA-6778 than RA-6772
RA-6772P		DF version, drives two slave RA-6230 receivers
RA-6778	0.015-30MHz	many variations, some w/ preamps, 12/16/32 memories,

RA-6778Q			same as RA-6778 except without tuning dial (keyboard only)
RA-6790	0.5-30MHz	7 filter slots	LCD readout, synthesized circuitry, dual conversion 40.455MHz first IF, 455kHz second IF, AM/FM/CW/USB/LSB thorough BITE, early version w/3850 CPU (no "Fault" LED), later w/Z-80 CPU (has "Fault" LED), tuning speeds 1/30/1000Hz standard, 1/10/100Hz on LF or with special EPROMs, latest models have LED illumination of LCD displays, options available: ISB, preamp, LF circuitry (to 10 kHz) (requires special A7 board and EPROMs - many receivers have LF w/o special A7 and do not work well below 400kHz), RS-232, IEEE-488, 5-1/4" rack mount, 30 lbs
RA-6790/GM		7 filter slots	LCD readout (mil R-2174/URR) later version of RA-6790, w/Z-80 CPU
RA-6793	0.5-30MHz	7 filter slots	later version of RA-6790, adds scanning and memory functions, keypads with real buttons and Hall-effect switches
RA-7915	0.04-30MHz	2.75/6kHz	Six channel xtal control, rack mount 3-1/2"h, 14lbs
RA-8772	0.015-30MHz	6 filters	LED readout, similar to RA-1772 (US) and RA-6772 (UK) except Canadian made, plug-in card const
RTA-191	2-30MHz	1 avail, choice of 0.35/1.2/3.4/3.5/6/8 kHz	remote controlled DSB/SSB/CW (ISB, FSK opt) modular receiver, fills a complete six foot rack

Spectrum Display Units (SDUs):

Model	IF	Bandwidths	Notes
MA-1119			Part of RS-3153 tactical ESM system

MA-2232	0.25/0.5/1/2 /4/8MHz	LCD display, rack mount 3.5" high
RA-66B	0.1-1MHz	designed for RA-17/RA-117 receivers
RA-366A	2-3MHz or 1.6MHz	powered by receiver, no internal supply, rack mount 3-1/2" high
RA-366B		as above, except w/ internal supply
RA-6366		designed for RA-6217, half rack

Transceivers:

Model	Coverage	Bandwidths	Notes
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AN/PRC-116	see Jaguar-V system		
AN/VRC-82	see Jaguar-V system		
BGC-39B	1.5-30MHz		USB/LSB/FSK transceiver, 10 pre-programmable chan at 100Hz spacing, 5/25/50w, 12/24VDC, 3"x8.1"x6.1", 5lbs, Racal-Tacticom Ltd
MA-4040A	1.6-30MHz		USB/LSB/CW/AM transceiver, 284,000 chan, 100Hz spacing, 20W vehicular or 15W manpack, 3"x13.2"x11.3", 10lbs, Racal-Tacticom Ltd
PRM-4021	2-16MHz		USB/LSB/CW/AM transceiver, 140,000 chan, 100Hz spacing, 2.5 or 10W PEP, integral manual antenna tuning unit, speech proc, 3.1"x9"x13.2", 7.7lbs, Racal-Tacticom Ltd
PRM-4031	1.6-30MHz		USB/LSB/CW/AM transceiver, 284,000 chan, synthesized, 100Hz spacing, 2.5 or 10W PEP, speech proc, 12VDC, 3.1"x9"x13.2", 7.7lbs, Racal-Tacticom Ltd
PRM-4051 "Squadcal"	2-7MHz		SSB transceiver, 29 chan, xtal control, 3"x9"x10", 23.1lbs, Racal-Tacticom Ltd, production: 12,000 units
PRM-4051 "Squadcal 2"	2-12MHz		USB/LSB/CW transceiver, 100,000 chan, synthesized, 100Hz spacing, 5W CW/PEP, 3"x9"x10", 16.5lbs,

Racal-Tacticom Ltd

PRM-4090	20-80MHz	FM transceiver, 9 channel programmable, (2400 avail, 25kHz spacing) 16kbits/s data capable, psuedo-white-noise encryption option, 5w, Racal-Tacticom Ltd
PRM-4700A	30-88MHz	FM transceiver, 9 channel programmable, (2321 avail, 25kHz spacing) 16kbits/s data capable, 10mW or 3w, simplex or half duplex, manpack, vehicular or base station config, 2.3"x6.2"x8", 3.8lbs, Racal-Tacticom Ltd
PRM-4720A	30-88MHz	FM transceiver, similar to PRM-4700A except lightweight "personal transceiver" packaging, 1w, nicad batts, 8.7"x2.8"x1", 1.3lbs, Racal-Tacticom Ltd
PRM-4740A	30-87.975MHz	FM transceiver, frequency hopping, narrow (6.4MHz) or wideband orthogonal modes, 1w, digital encryption, 6 second synchronization, selective calling, hand-held, 9.7"x2.95"x1.5", Racal-Tacticom Ltd
PRM-4740B	30-87.975MHz	Similiar to PRM-4740A except with internal spkr/mike
RT-349	any 10MHz of 30-76MHz	FM hand-held transceiver, 400 chan, synthesized, 25kHz, 0.25/0.5/1w, 9.6"x3.5"x1.5", 3.3lbs, Racal-Tacticom Ltd, part of UK/PRC-349
RT-350 "Clansman"	36-57MHz	NBFM transceievr, 841 chan, synthesized, 25kHz spacing, 2w, manpack case, 15VDC batt pack, 10.5"x5.6"x2.8", 6.8lbs, Racal-Tacticom Ltd
RT-351 "Clansman"	30-76MHz	NBFM transceiver, 1841 chan, synthesized, 25kHz spacing, 4w, manpack case, 24VDC nicad batt pack, 15.6"x9.4"x4.7", 16.5lbs, Racal-Tacticom Ltd
RT-352 "Clansman"	30-76MHz	same as UK/PRC-351 except 20w and 19.8lbs
TRA-355	2-15MHz	SSB transceiver, 2-15MHz, 125w

PEP, 80w CW, AC or 12VDC
versions, 11"h X 19-1/4"w X 19"d,
70 lbs

TRA-931 1.6-30MHz 2/8kHz
"Synca 30"

USB/LSB/CW/AM transceiver,
28,400 chan, synthesized, 1kHz
spacing, 20w CW/SSB, 5w AM, 8ft
whip, manpack, 24VDC, 5"x14.4"
x10.8", 24.2lbs, Racal-Tacticom
Ltd

TRA-931P 1.6-30MHz 2/8kHz

System component version of
TRA-931 same features plus 8
programmable freq chan, can be
programmed in secure mode, search
mode, accessories include:
TA-4044B linear amp, BCC-540B ATU
and MA-4015 rcvr bandpass filter
unit, 6.5"x14.4"x10.8", basic wt.
24.2lbs, Racal-Tacticom Ltd

TRA-931XF 1.6-30MHz 2/8kHz

TRA-931 with frequency hopping
capability

TRA-967 36-76MHz

NBFM transceiver, 1600 chan,
synthesized, 25kHz spacing,
options: /1 = 1w, /3 = 3w, 12VDC,
1"x6.5"x3", 7.7lbs, front panel
"Tritium-Beta" lights require no
power, Racal-Tacticom Ltd

Transmitters and Amplifiers:

Model	Description
MA-79G	Universal drive unit, 1.6-30MHz, LSB/USB/DSB/FSK/CW transmitter, looks like RA-17 and uses Wadley Loop for stability
MA-1723	Transmitter drive unit, 1-30MHz, USB/LSB/ISB/CW/AM/FSK, 290,000 chan, synthesized, 100Hz spacing, microprocessor control, LCD display, 100 chan memory, rack mount 5.25" high, 44lbs
TA-940B	Amplifier, 1.6-30MHz, 100w FSK or SSB, 25w AM, 100mW or 5w input, 24-30VDC, 6.6"x13.3"x8.9", 19lbs, Racal-Tacticom
TA-944	Amplifier, 1.6-30MHz, 100w PEP SSB, 1-5w input, 24-30VDC, built-in antenna tuning unit (75 ohm), 4.6"x14.4"x10.8", 13lbs, Racal-Tacticom Ltd
TA-1823	Amplifier, 1.6-30MHz, 1000w CW/SSB, automatic tuning and antenna loading, 200-250VAC, 3.5kva, 550lbs

TA-3510 Amplifier, 2-30MHz, 10kw CW/SSB, 380-440VAC, 3 phase, 23kva

TA-4044 Amplifier, 1.6-30MHz, 100w PEP SSB, 100mw or 5w input, 12 or 24VDC, 5.7"x15.4"x11.4", 38.5lbs, Racal-Tacticom Ltd

TTA-1860 Transmitter, 1.6-30MHz, synthesized, 100Hz steps, 1000w CW/SSB, 210-250VAC, 5.5kva

TTA-1870 Transmitter, same as TTA-1860, except 500w and 2.4kva

TTA-1885 Transmitter, 1.6-30MHz, consists of MA-1723 drive unit and TA-1823 1kw power amplifier

Accessories:

Model	Description
MA-168	Diversity switch, designed for two RA-17s or RA-117s, rack mount 1-3/4" high
MA-174	Receiving Aerial Multicoupler, 8 receivers, rack mount, 7" high
MA-175	ISB adaptor for MA-79G transmitter, rack mount 5-1/2" high
MA-197B	Preselector for RA-17 and RA-117, rack mount 7" high
MA-202	ISB adapter, like MA-175, except encodes two audio channels on each sideband
MA-6317	External synthesiser for RA-6217D
MA-8134	Time Insertion Unit, time code generator/reader for monitoring station taping use. Canadian made.
RA-63G	SSB adapter for RA-17, 100kHz IF input, British "valves", rack mount 3-1/2" high
RA-63H	as above, except w/ American tubes
RA-63D	like RA-63G, except crystal controlled
RA-73	two "valve" convertor for SSB/ISB adapters using 455kHz
RA-98	ISB adapter for RA-17, 100kHz IF input, discriminator tuning meter, rack mount 5-1/4" high
RA-98C	as above, except w/DSB and audio response down to 150Hz for broadcast transmission reception
RA-98D	like RA-98, except crystal controlled
RA-121A	ISB adapter for RA-17, 100kHz IF input, tuning scope,

British "valves", rack mount 5-1/4" high

RA-121B as above, except w/ American tubes

RA-218 ISB adapter, like RA-63, except designed for RA-117, rack mount 5-1/4" high

RA-298C ISB/SSB adapter, for RA-217/1217, RA-1218 or RA-1219, 100 kHz IF, powered by receiver, rack mount, 1-3/4" high

RA-298D as above but separates two audio channels from each sideband

RA-316C FSK convertor, otherwise as above

RA-326 Dual diversity FSK convertor, essentially two RA-316Cs in one box, rack mount 1-3/4" high

RA-6397 Preselector for RA-6217

RA-6377 Nixie readout and comparator for RA-6217 series

VRA-4026A Automatic antenna tuning unit, 1.6-30MHz, 20w, matches 50 ohm transceiver to 10' or 15' whip, designed for MA-4040A transceiver and PRM-4041A system 3"x3"x10", 3.5lbs, Racal-Tacticom Ltd

Systems:

Model	Description
MA-1110	Direction finding processing and display unit, commutating Adcock unit used with RA-1794 or RA-1796 receivers, used with AE-3007 HF or AE-3020 VHF/UHF DF antenna units. 110-240VAC
MA-1111	Same as MA-1110, except for 10.7-30VDC
MA-1122	DF processing and display unit, similar to MA-1111, except ruggedized and packaged for vehicular EW use
PRM-4041A	HF/SSB transceiver system, major components: MA-4040A transceiver and VRA-4026A automatic antenna tuning unit, other components: MA-4025A battery pack, AT-19615 manpack frame, MA-4985A local control unit, MA-4033A remote control unit
RDF-3200	Hunting DF system, vehicular DF system consisting of either RA-1794 or RA-1796 receivers, MA-1112 DF processing and display unit either the AE-3007 or AE-3020 DF antenna system
RS-3153	Tactical ESM system, consists of two RA-1794 or RA-1796, MA-1115 antenna switching unit, MA-1116 operator processing and audio switching unit,

MA-1119 SDU and SR-108A cassette tape recorders

SAT-3311 HF signals analysis unit, consists of RA-1792 receiver, SA-3302 digital signal processor and SA-3301 operator control and display unit

UK/PRC-349 VHF/FM transceiver system, major component: RT-349

UK/PRC-350 VHF-FM transceiver system, major component: RT-350

UK/PRC-351 VHF-FM transceiver system, major component: RT-351

UK/PRC-352 VHF-FM transceiver system, major component: RT-352

UK/VRQ-301C VHF-FM transceiver system, major component: RT-351 transceiver, AM-352 100w amplifier, BCC-534 power supply, BCC-550 vehicle interface, BCC-543 ATU, Racal-Tacticom Ltd

VRM-4125 USB/LSB/CW/AM/FSK transceiver system, 1.6-30MHz, 284,000 chan, synthesized, 100kHz spacing, 100mW/10/100/400w, 24VDC vehicular design, Racal-Tacticom Ltd

VRM-5080 VHF/FM tank transceiver system, 30-76MHz, 1841 chan, synthesized, 25kHz spacing, 5mW/10/50W, 24VDC, Racal-Tacticom Ltd

VRQ-319 HF-USB/LSB/CW/FSK transceiver system, 1.5-30MHz, major components: BCC-39B transceiver, and either BCC-540F or BCC-565 automatic antenna tuning units, 12/24VDC, Racal-Tacticom Ltd

Cougar Encrypted voice communications system using analog and digital modes, 68-88MHz, 132-174MHz and 405-470MHz, FM, 2, 10 or 20w, 10 programmable channels, single or two frequency simplex operation, static, mobile or transportable configurations, 13.6VDC, 2.8"x13.6"x16.3", 36.3lbs, Racal Messenger Ltd

Jaguar-U UHF version of Jaguar-V, 225-400MHz, 7,000 chan, synthesized, 25kHz spacing, 10mw/4w manpack, 10mw/4/50w mobile/ground, 10mw/4/15 airborne

Jaguar-V VHF ECCM transceiver, 30-88MHz, FM, 3 & 50w vehicular, 10mW & 4w manpack, analog 25/50kHz channels or pseudo random orthogonal frequency hopping modes (narrow 6.4 MHz and full band modes, 150-200 hops per sec), designed to survive under severe jamming, direction-finding, and interception, Racal-Tacticom Ltd, nomenclatured in the US as AN/PRC-116 (manpack) and AN/VRC-82 (vehicular)

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